

WHAT IS CLAIMED IS:

1. A detection-spot forming method for analyte detection chips each including a support and a large number of detection spots arranged in a regular pattern on a surface of the support and containing different components, each detection chip detecting a specific component of an applied analyte through determination of the relation of specificity between the specific component of the applied analyte and a specific detection spot among the detection spots,
wherein, as means for forming detection spots on the surface of a support, a plurality of injection modules are provided, each injection module being equipped with one or more injection units adapted to jet spot-forming liquid containing a component for formation of the detection spots; and
the spot-forming liquid is jetted simultaneously from the injection units of the respective injection modules toward the surfaces of a plurality of supports corresponding to the injection modules in order to simultaneously form detection spots on the surfaces of the supports.
2. A detection-spot forming method according to claim 1, wherein the positions of the injection units of the injection modules, which face the surfaces of the respective supports, are determined such that the distances between the corresponding injection units of the injection modules become integral multiples of the intervals of the detection spots; and the injection modules successively form detection spots in different regions on the surfaces of the respective supports, while moving to locate above the surfaces of the supports successively.

3. A detection-spot forming method according to claim 2, wherein when the injection modules are moved to be located above the surfaces of the respective supports successively, spot-forming liquid jetted from injection units located outside the surfaces of the supports is used for judgment as to whether the injection units operate properly.
4. A detection-spot forming method according to claim 1, wherein each injection module includes at least one injection unit having a charge port for charging a spot-forming liquid from the outside, a cavity into which the spot-forming liquid is introduced and charged, and a discharge port for discharging the spot-forming liquid; the cavity is made of ceramics; a piezoelectric/electrostrictive element is attached to at least one side wall surrounding the cavity; the spot-forming liquid is allowed to flow within the cavity; and upon drive of the piezoelectric/electrostrictive element, the volume of the cavity is changed in order to discharge the spot-forming liquid in a predetermined amount from the discharge port, to thereby form a detection spot on the surface of the support.
5. A detection-spot forming method according to claim 1, wherein each injection module includes a large number of injection units which hold different spot-forming liquids for forming different detection spots containing different components.
6. A detection-spot forming method according to claim 1, wherein the detection chip is a DNA chip or DNA microarray having detection spots containing DNA fragments, a bio chip having detection spots including antibodies, or a protein chip having detection spots including proteins.

7. A detection-spot forming method for analyte detection chips each including a support and a large number of detection spots arranged in a regular pattern on a surface of the support and containing different components, each detection chip detecting a specific component of an applied analyte through determination of the relation of specificity between the specific component of the applied analyte and a specific detection spot among the detection spots,

wherein, as means for forming detection spots on the surface of a support, a plurality of injection modules are provided, each injection module being equipped with one or more injection units adapted to jet spot-forming liquid containing a component for formation of the detection spots;

the spot-forming liquid is jetted simultaneously from the injection units of the respective injection modules toward the surface of a single support which faces the injection modules in order to simultaneously form detection spots on the surface of the support; and the support is divided into a plurality of pieces.

8. A detection-spot forming method according to claim 7, wherein the positions of the injection units of the injection modules, which face the surface of the support, are determined such that the distances between the corresponding injection units of the injection modules become integral multiples of the intervals of the detection spots; and the injection modules successively form detection spots in different regions on the surface of the support, while moving to locate above the different regions of the support successively.

9. A detection-spot forming method according to claim 7, wherein

when the injection modules are moved to be located above the regions on the surface of the support successively, spot-forming liquid jetted from injection units located outside the surface of the support is used for judgment as to whether the injection units operate properly.

10. A detection-spot forming method according to claim 7, wherein each injection module includes at least one injection unit having a charge port for charging a spot-forming liquid from the outside, a cavity into which the spot-forming liquid is introduced and charged, and a discharge port for discharging the spot-forming liquid; the cavity is made of ceramics; a piezoelectric/electrostrictive element is attached to at least one side wall surrounding the cavity; the spot-forming liquid is allowed to flow within the cavity; and upon drive of the piezoelectric/electrostrictive element, the volume of the cavity is changed in order to discharge the spot-forming liquid in a predetermined amount from the discharge port, to thereby form a detection spot on the surface of the support.
11. A detection-spot forming method according to claim 7, wherein each injection module includes a large number of injection units which hold different spot-forming liquids for forming different detection spots containing different components.
12. A detection-spot forming method according to claim 7, wherein the detection chip is a DNA chip or DNA microarray having detection spots containing DNA fragments, a bio chip having detection spots including antibodies, or a protein chip having detection spots including proteins.